



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,700	10/24/2003	Charles W. Propst JR.	APV31437A	6803

7590 01/26/2006

Stevens, Davis, Miller & Mosher, L.L.P.
Suite 850
1615 L Street, N.W.
Washington, DC 20036

EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
----------	--------------

1731

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,700

Applicant(s)

PROPOST ET AL.

Examiner

Dennis Cordray

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6-10,13-15,18-20,23-27,30-32,36-39 and 41-47 is/are pending in the application.
- 4a) Of the above claim(s) 1,6-10,13-15,18-20,23-25 and 36-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26,27,30,31,41-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Examiner's comment

1. In the Amendment to the claims submitted 28 Dec, 2005 in response to an Office Action, the first paragraph on p 2 and the first paragraph on p 6 both indicate the status of Claim 26 as cancelled. Claim 12 is not mentioned as being either pending or cancelled. The amended listing of claims submitted on the same date shows the status of Claim 12 as Cancelled and Claim 26 as Amended. Since the remaining pending claims are dependent on Claim 26, it is assumed for the purpose of this examination that the amended claims as submitted are correct and that Claim 26 is still pending, while Claim 12 is Cancelled.

Claim Objections

Claim 41 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 41 recites examples of vinyl acetate, vinyl chloride, vinylidene chloride, isobutylene, vinyl ethers, maleic acid, itaconic acid as acrylic acid containing material. The above species are not acrylic acid containing materials and thus expand rather than limit the subject matter of the previous claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 41 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 41, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Claim 42 depends from and thus inherits the indefinite character of Claim 41.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 26, 27, 30, 31, 41, 42, 44, 45, 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kijlstra et al (CA 2354966) or Westman et al (WO 02/25013) in view of Nigam (6171444 and further in view of Carlson (2726230).

Kijlstra et al disclose a cationic composition (p 2, lines 18-19) comprising:

- A cationic polymer dispersion containing an acrylic acid ester and a cationic monomer (p 3, lines 1-11);
- Wood fibers (p 12, lines 26-27);

Art Unit: 1731

- Alkyl ketene dimer (AKD) and/or alkyl succinic anhydride (ASA) (p 13, lines 20-27); and
- A starch (p 13, lines 27-31).

As defined in the instant disclosure, p 8, "acrylic acid containing" refers to "materials and compositions, such as polymers, oligomers, or monomers, comprising at least one acrylic or acrylic acid moiety." An acrylic acid ester thus fits within the definition. Kijlstra indicates that the AKD and/or ASA may be used to presize the base paper when the cationic polymer dispersion is used as a surface size. When the cationic polymer dispersion is added to the surface, the complete sizing composition on the surface comprises the claimed invention.

Westman et al discloses a composition comprising

- a polymer that can be cationic and can include cationic starches, acrylate based polymers, and cationic resins (p 3, lines 27-36 and p 4, lines 1-6);
- AKD and/or ASA (p 7, lines 24-26 and 32-33); and
- Wood fibers (p 8, lines 28-29).

Kijlstra et al and Westman et al do not disclose the addition of a crosslinking agent to the composition.

Nigam discloses a sizing composition comprising a polyacid (abstract), which can be a polyacrylic acid (col 8, lines 54-57), a cationic starch (col 9, lines 12-13 and 36-41), and a crosslinking agent for intramolecular and/or intermolecular crosslinking of sizing agents (col 10, lines 52-56).

Art Unit: 1731

Carlson discloses polyvalent metallic oxides that are crosslinking agents for acrylic containing polymers (col 1, lines 63-72 and col 2, lines 1-22). Specific examples given are oxides of zinc, calcium, magnesium, tin, titanium, and aluminum (col 6, lines 67-75).

The art of Kijlstra et al, Westman et al, Nigam, Carlson and the instant invention are analogous as pertaining to compositions containing polymers comprising acrylic acid or acrylic acid derivatives. It would have been obvious to one of ordinary skill in the art at the time of the invention to add a polyvalent metal oxide crosslinking agent to the composition of Kijlstra et al or Westman et al in view of Nigam and further in view of Carlson to effect intramolecular and/or intermolecular crosslinking of the sizing agents. Since the polymer would contain weakly acidic moieties, it would also have been obvious to add a well known weak base such as ammonium hydroxide to control the pH of the composition.

3. Claims 43 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kijlstra et al or Westman et al in view of Nigam and further in view of Carlson and Dumas (4522686).

Kijlstra et al, Westman et al, Nigam and Carlson do not disclose specific alkyl ketene dimers.

Dumas discloses aqueous sizing compositions comprising a ketene dimer as a hydrophobic cellulose reactive sizing agent (Abstract). Specific examples given of the dimer include octyl, decyl, dodecyl, tetradecyl, hexadecyl, octadecyl, eicosyl, docosyl,

Art Unit: 1731

tetracosyl, phenyl, benzyl, beta-naphthyl and cyclohexyl ketene dimers, ketene dimers prepared by known methods from montanic acid, naphthenic acid, $\Delta^{9,10}$ -decylenic acid, $\Delta^{9,10}$ -dodecylenic acid, palmitoleic acid, oleic acid, ricinoleic acid, linoleic acid, and eleostearic acid, as well as ketene dimers prepared from naturally occurring mixtures of fatty acids (col 4, lines 32-47).

The art of Kijlstra et al, Westman et al, Nigam, Carlson, Dumas and the instant invention are analogous as pertaining to compositions containing polymers comprising acrylic acid or acrylic acid derivatives and their use as sizing compositions. It would have been obvious to one of ordinary skill in the art at the time of the invention to use at least one of the claimed alkyl ketene dimers in the composition of Kijlstra et al or Westman et al in view of Nigam and further in view of Carlson and Dumas as well known and functionally equivalent choices.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 1731

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

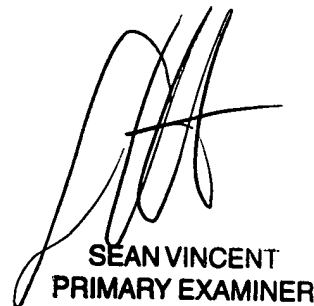
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DRC



SEAN VINCENT
PRIMARY EXAMINER